Atty. Docket No.: CA1468
PATENT APPLICATION

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Application No.: 10/033,646

REMARKS

Applicant respectfully notes that the "Office Action Summary" page of the Office Action mailed by the U.S. Patent and Trademark Office on March 9, 2006, had both boxes 2a) and 2b) checked. However, the body of the Office Action does not contain the language required to indicate the finality of the rejections. Therefore, the aforesaid Office Action is non-final.

Claim Amendments

Claims 1-8 and 11-21 are all the claims pending in the application. In "Response to Arguments" portion of the Office Action, the Examiner states that the claims 1, 11, 14 and 21 do not recite the specific order of steps that, as Applicant has argued in Applicant's Amendment filed on December 20, 2005, distinguish the claimed invention from the combination of Wahn et al. (U.S. Patent No. 6,324,654) and Hubis et al. (U.S. patent No. 6,182,198). While the Applicant does not agree with the Examiner's characterization of the claims and the prior art, in view of the Examiner's comments in the last Office Action, Applicant chooses to amend claims 1, 11, 14 and 21 to recite the order of steps more specifically and to emphasize the aforesaid distinction. The amended claims 1, 11, 14 and 21 recite the specific order of steps that is not taught or suggested in the prior art and, therefore, are believed to be allowable.

Claims 1-6, 11-17 and 19-21

Turning now to the merits of the rejection, claims 1-6, 11-17 and 19-21 stand rejected under 35 U.S.C. 103(a) as being allegedly unpatentable over Wahl et al. (U.S. Patent No. 6,324,654) in view of Hubis et al. (U.S. Patent No. 6,182,198). Applicant respectfully traverses

this rejection in view of amendments to the independent claims 1, 11, 14 and 21 and further in view of the following arguments.

Specifically, in response to Examiner's rejection, Applicant amends independent claims 1, 11, 14 and 21. The independent claims generally recite a feature of the invention wherein the third and fourth logical volumes are synchronized only after the data from the first and second logical volumes are copied to the third and fourth logical volumes, respectively. In addition, as recited in the amended claims, the sync state between the respective volumes is broken also after the data from the first and second logical volumes are copied to the third and fourth logical volumes. This sequence of steps recited in the above claims is not taught or even suggested in any of the art cited by the Examiner.

Applicant respectfully draws the Examiner's attention to the fact that embodiments of the present invention recited in claims 1, 11, 14 and 21 provide capability for making multiple pairs of remotely synchronized volumes without the necessity of making a remote copy for each synchronized pair. Thus, only one remote copy (mirror) is required. To this end, the inventive concept recited in the above claims involves first making the remote copy, then making a local copy on the remote storage system and only subsequently remotely synchronizing additional local copies.

On the other hand, the reference cited by the Examiner, Wahl et al., teaches exactly the prior art technique, wherein the mirror configuration shown in Fig. 5 of Wahl et al. is achieved by making two remote copies, which are performed independently. Applicant respectfully draws the Examiner's attention to col. 12, ln. 53-56 of Wahl et al., wherein Wahl et al. teaches that each

logical volume group is independently copied. Also in Fig. 5, Wahl et al. shows two independent links between devices of Logical Group 0 and Logical Group 1. Therefore, according to teachings of Wahl et al., the system first makes a remote copy for Logical Group 0 volume and then makes a remote copy for Logical Group 1 volume, exactly as in the prior art. In other words, in Wahl et al., two remote copies (mirrors) are made. On the other hand, claims 1, 11, 14 and 21 recite a configuration, wherein the system first creates a remote mirror (copy)[1]; the second local mirror on the remote site[2] is established after the establishment of the remote mirror[3] and wherein the second remote sync state[4] is established after both local mirrors[5] are created. Using these specifically ordered steps, the inventive system avoids the necessity to make two remote mirrors.

There is nothing in Wahl et al. or any other art cited by the Examiner that teaches the sequence of steps recited in the amended claims. While Wahl et al. does teach two synchronized pairs of volumes (Logical Groups 0 and 1 in Fig. 5), Wahl et al. is totally devoid of teaching the specific sequence of steps recited in claims 1, 11, 14 and 21. In other words, while Fig. 5 of Wahl et al. does show a configuration having four volumes and two remote links, it does not explain what specific steps are used in achieving this configuration. Specifically, Wahl et al.

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[1] The remote copy/mirror is between the first and second units.

[2] The local copy on the remote site is between the second and fourth units.

[3] The remote copy/mirror is between the first and second units.

[4] The second remote sync state is between the third and fourth units.

[5] The two local mirrors are between the first and third units and between the second and fourth units.

does not teach or suggest first establishing a remote mirror and then establishing a local mirror on the remote site and only then establishing the two remote sync data connections. The second reference cited by the Examiner, Hubis et al., also lacks any such teaching. Because neither Hubis et al. nor Wahl et al. teach the specific limitations of the amended independent claims 1, 11, 14 and 21, the aforesaid claims are patentable over the alleged combination.

In the event the Examiner continues to insist that Wahl et al. or Hubis et al. teach the specific sequence for creating mirror volumes, as recited in claims 1, 11, 14 and 21, Applicant respectfully requests the Examiner to point Applicant to the exact language of Wahl et al. or Hubis et al., which, in the Examiner's opinion, teaches the aforesaid sequence. "[W]hen the PTO asserts that there is an explicit or implicit teaching or suggestion in the prior art, it must indicate where such a teaching or suggestion appears in the reference." In re Rijckaert, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993) (citing In re Yates, 663 F.2d 1054, 211 USPQ 1149, 1151 (CCPA 1981)).

Applicant also respectfully reminds the Examiner that in rejections under 35 U.S.C. 103(a), the Examiner may not rely on the doctrine of inherency. "That which may be inherent is not necessarily known. Obviousness cannot be predicated on what is unknown. Such a retrospective view of inherency is not a substitute for some teaching or suggestion supporting an obviousness rejection." In re Rijckaert, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993) (citation omitted).

Yet further, in combining Wahn et al. with Hubis et al., the Examiner states that one of ordinary skill in the art would be allegedly motivated to do so because the combination would

allow the existing system to be accessed while the third and fourth logical volumes are synchronizing. However, the Examiner has failed to point out where the suggested motivation, to enable the existing system to be accessed while the third and fourth logical volumes are synchronizing, for making the alleged combination, appears in the prior art. In fact, it seems that the motivation suggested by the Examiner has been taken from the Examiner's hindsight gleaned from the invention itself. This is impermissible under the law. Specifically, when a prior art reference requires a selective combination to render obvious a subsequent invention, there must be some reason for the combination other than the hindsight gleaned from the invention itself. Something in the prior art as a whole must suggest the desirability, and, thus the obviousness, of making the combination. Uniroyal, Inc. v. Rudken-Wyley Corp., 5 U.S.P.Q.2d 1434 (Fed. Cir. 1988). Therefore, the Examiner must point out to specific prior art references which teach that is is desirable to enable the existing system to be accessed while the third and fourth logical volumes are synchronizing. Because the requisite motivation has net been established by the Examiner, claims 1, 11, 14 and 21 are patentable over the combination of references cited by the Examiner for this additional reason as well.

Moreover, the portion of Hubis et al. relied upon by the Examiner is referred to by Hubis et al. as a flawed technique which should not be used, see Hubis et al., col. 1, ln. 34-45. Therefore, one of ordinary skill in the art would not be motivated by Hubis et al. to modify the system of Wahl et al. as the Examiner tries to suggest. References must be taken for their teaching as a whole - "the test is whether the combined teachings of the prior art, taken as a whole" suggest the modifications proposed by the Examiner to a person of ordinary skill in the

relevant art. *In re Napier*, 55 F.3d 610, 34 USPQ2d 1782 (Fed. Cir. 1995); *Graham v. John Deere Co.*, 383 U.S. 1, 17-18, 148 USPQ 459, 467 (1966) (§103 requires consideration, inter alia, of differences between the prior art and the claimed invention taken as a whole). Absent such a showing or suggestion (to combine the references) in the prior art, the Examiner can do no more than piece the invention together using the prior art references and the Applicants' patent application as a template. Such hindsight reasoning is impermissible. *In re Zurko*, 111 F.3d 887, 42 USPQ2d 1476 (Fed. Cir. 1997); *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991); *In re Fine*, 837 F.2d 1071, 1075, 5 USPQ2d 1596, 1600 (Fed. Cir. 1988).

For all the foregoing reasons, amended independent claims 1, 11, 14 and 21 are patentable over the cited art. Applicant further respectfully submits that Examiner's rejection of claims 2-6, 8, 12, 13, 15-17, 19 and 20 is rendered moot by the present amendment and that these claims are patentable by definition, at least due to their dependence on the patentable independent claims 1, 11, 14 and/or 21.

Claims 7 and 18

Claims 7 and 18 stand rejected under 35 U.S.C. 103(a) as being allegedly unpatentable over Wahl et al. (U.S. Patent No. 6,324,654) in view of Hubis et al. (U.S. Patent No. 6,182,198), as applied to claims 1 and 14 and further in view of Kamvysselis et al. (U.S. Patent No. 6,496,908). Applicant further respectfully submits that Examiner's rejection of claims 7 and 18 is rendered moot by the present amendment and that these claims are patentable by definition, at least due to their dependence on the patentable independent claims 1, 11, 14 and/or 21.

Conclusion

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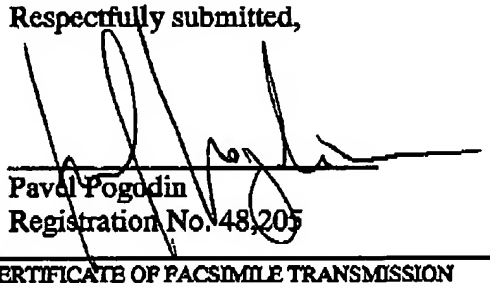
In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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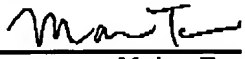
CERTIFICATE OF FACSIMILE TRANSMISSION

I hereby certify that this AMENDMENT UNDER 37 C.F.R. § 1.111 is being facsimile transmitted to the U.S. Patent and Trademark Office this 9th day of June, 2006.



Mariann Tam